



Samson and the Philistines



The function of costume and drapery

In the above picture by faculty member Austin Briggs, the costumes do much to place the scene immediately. His knowledge of drapery is skillfully brought to bear on the subject of his picture so that it becomes a real part of the design. The sketches of the helmets were done to familiarize himself with their form so that when he came to painting them he could do so with assurance. The three sketches of the draped arm were done from models, but as it finally appeared, it was not a copy of any one of the sketches — it was a synthesis of all three. Blindly copying a preliminary study of drapery, if it is not suited to the design of your picture, is wrong, for drapery, if it is to mean anything, must be made an integral part of the picture. The study of the dead soldier below, though not finally used in the picture, is an excellent example of how to describe a figure with drapery.

Drapery

The individuality and character of drapery is almost as important in the drawing of a figure as the figure itself. Cloth, by itself, is without any particular form or character, but in use, it becomes "alive" and it is this live action of cloth, which we call drapery, that chiefly concerns us here.

Many distinct kinds of folds are present in drapery, each of which must be analyzed before its character and individuality can be expressed. There are folds that clasp, radiate, curve, fall and dip. There are others that drop, lock and zigzag. But the structure of all these various folds is governed by several basic laws. If you understand and memorize them, you will have a sound, working basis for draping a figure or still life. The purpose of this first section of the lesson is to study the principles that determine the shapes of folds and to learn to draw folds.

Laws of gravity

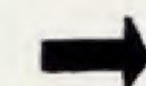
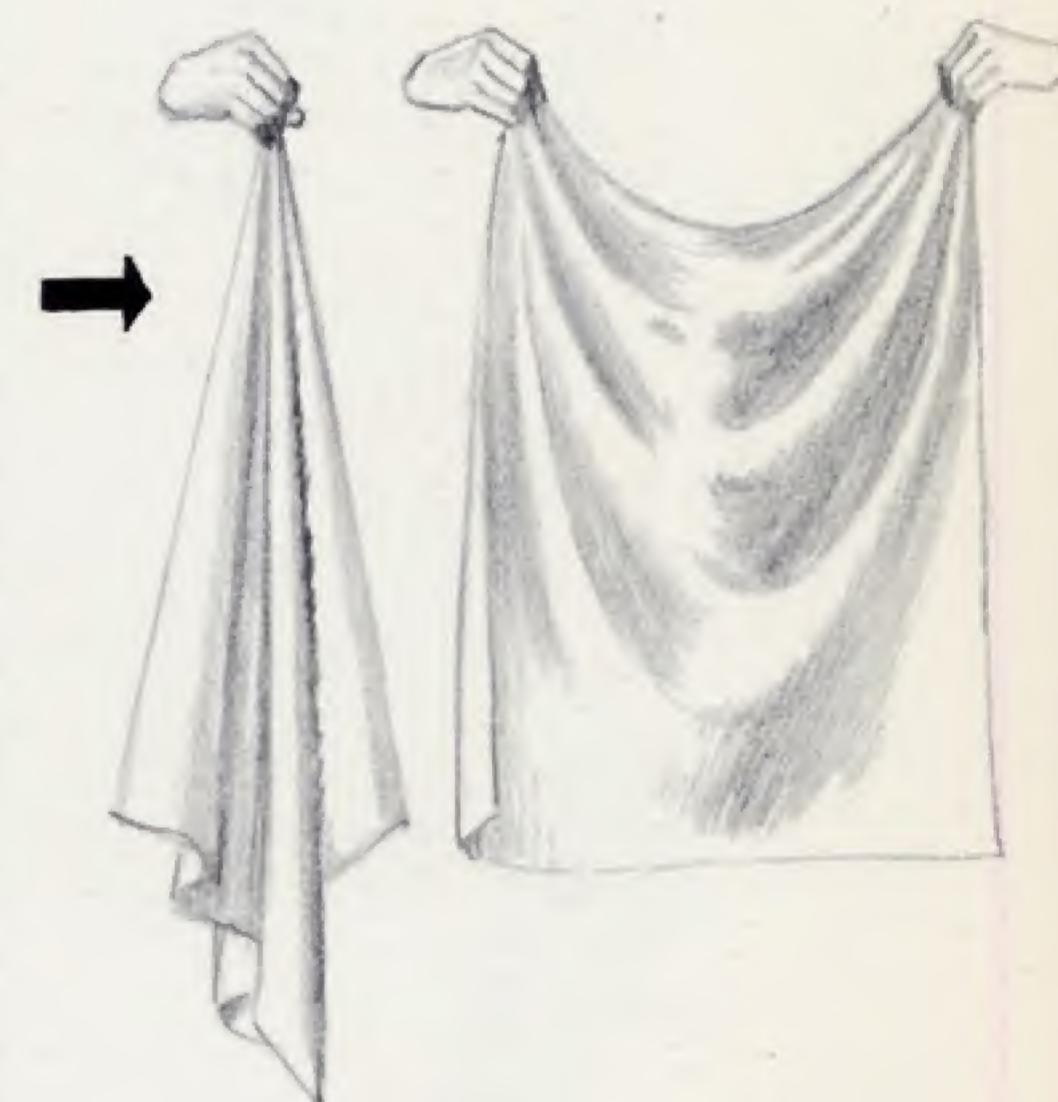
All folds are first governed by the laws of gravity. This can be proved in a very simple way. Hold a square piece of cloth in front of you and release it. It drops to the floor because of gravity and lies there inertly. Its predominant characteristic is that it conforms to the flatness of the floor. If you should drop it several times, this characteristic would not change — although the variety of folds may differ each time it is dropped. Now pick it up by an edge and hold it at arm's length. Pulled downward by the force of gravity, all the material falls toward the floor from the point where you grasp it. This is its point of support and you can see that folds of a definite character have developed. These folds are tubular or pipe-like and they hang vertically. You can repeat this simple experiment as many times as you wish and these pipe folds will always recur.

Now, take hold of the lower end of the cloth and lift it up until it is level with your other hand. Spread your hands slightly apart. Notice that folds of a different type, of a dipping or curving nature, sweep across from hand to hand. The slack in the center of the cloth is pulled down by gravity between your two hands — the two points of support. You could repeat this experiment endlessly and, while the details of the folds might vary, the character of the folds would always be the same. This is true because the laws of gravity and the principle of the point of support are at work.

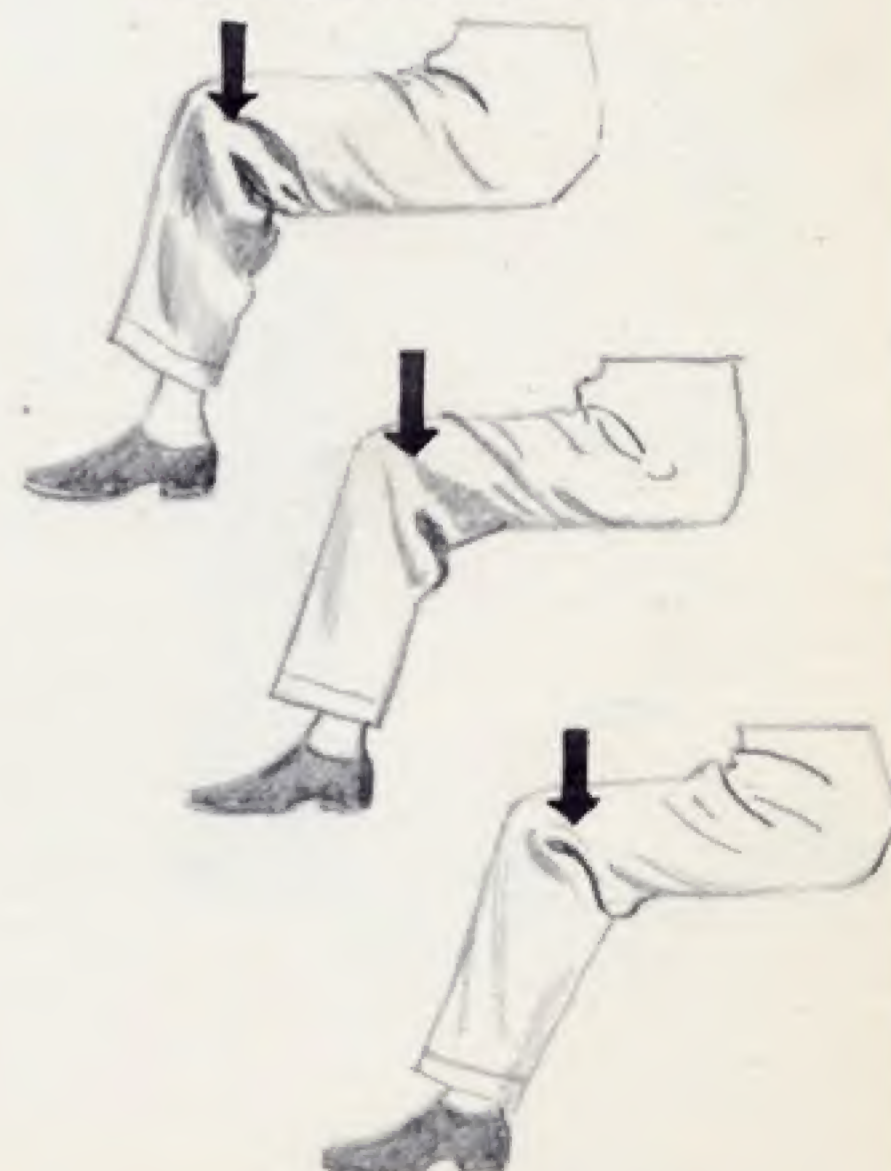
Laws of folds

While all folds are governed by the laws of gravity and by the point, or points of support, the character of the folds is, to a great extent, controlled by their function. With the addition of the principle of function, we actually have three things to remember: 1. The laws of gravity, 2. Points of support and tension, 3. The function.

Although folds may appear to be of a complex nature, they are not. Folds have, in fact, been classified according to a series of laws. The formulation of these laws became possible when it was learned that, under given conditions, predictable folds recur with only minor variations. For example, the marginal drawings on this page show the pipe-like folds falling from a single point of support and the curving folds when the cloth has two points of support. Under similar conditions these folds will recur constantly and from this knowledge general laws were formed. The folds may



In repeating a fold, only details change.



Draperies and costumes

Institute of Commercial Art, Inc.

vary in detail but the conditions that form them will not permit variations in their fundamental character.

Folds are classified according to seven basic laws. Their names, which indicate their function, are: 1. *Pipe*, 2. *Zigzag*, 3. *Spiral*, 4. *Half-lock*, 5. *Diaper*, 6. *Drop*, 7. *Inert*. You must thoroughly understand these seven laws because you are going to be constantly confronted with them. By understanding them, you will keep "out of trouble" when you are drawing and will not make meaningless marks indicating folds. The folds you draw will be decisive, directional and convincing. If you are drawing from a model, you will quickly recognize each type of fold and its function instead of copying the detail that meets the eye.

These laws were determined by the seven different functions of folds whenever cloth is used. If cloth is used as a drape over a figure, its function is controlled by the shape of the figure beneath and most of the seven laws occur somewhere on a draped figure. The depths of the folds are determined by the abundance of cloth in the slack areas between points of support or opposite the place of resistance. Remember, there is a factual reason for the behavior of each fold. They are not just a bunch of wrinkles. They are governed by basic laws.

Cloth conforms to the form beneath it. For example, a table cloth conforms to the form of the table. Folds in curtains are determined by points of suspension, tie-backs or fullness. Folds in a sleeve are determined by the arm beneath, and at the same time they contribute satisfactory definition to the structure of the underlying form.

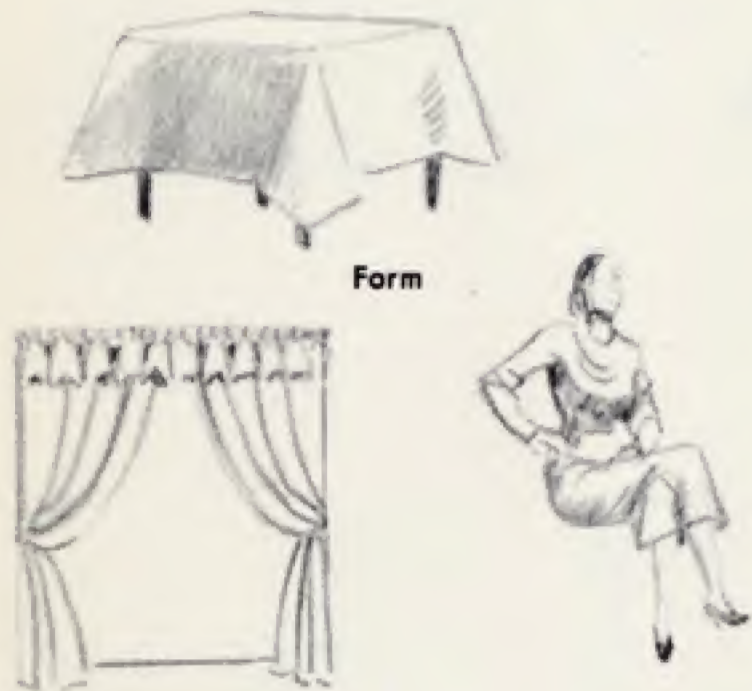
Variety

Varieties of folds are not "new" folds; they are only modifications of one or more of the seven basic folds. These modifications are caused by slackness, fullness, tension and direction — *PLUS* the form of the structure beneath. In the human figure, many motions, attitudes and postures contribute to variety. The style, cut of a garment and the quality of material cause diversity. Groups of folds in one area will be contrasted by simple areas. Spiral folds will contrast with angular ones, and zigzag folds with half-locks as the tension and support points shift.

As we have told you many times in this course, variety plus unity is a requisite of art. You will find that in drapery, the variety in folds is always unified by the shape of the form beneath it. This is a fortunate thing because it automatically eliminates folds that have no meaning. Don't forget that variety in folds must have a purpose, and that purpose is determined by the function of the underlying form.

Rhythm

The rhythm of drapery can be considered in many ways. There is the pure harmonious flow of a fold. There is the rhythm of a group of diaper folds that meet and die away. There is the precise rhythm of pipe folds fanning out from their point of support, the repetition of zigzag folds diminishing in size, the free flowing folds of motion. Then there are all of these in contrast to one another, large against small, deep against shallow, ending in a harmonious rhythmic arrangement. All artists, from the earliest times, have used the rhythmic quality of drapery in paintings. It is probably the most rhythmic form.



Form

Variety



Rhythm

Direction and emphasis

There are few forms that can show direction better than drapery. This happens because we readily accept the effect of gravity. The observer orients himself quickly by an angular direction, a vertical drop or a flowing suspension from point to point. Strain or resistance is quickly understood by tightness and direction of folds. The sharp, the graceful or the rhythmic flow of drapery in motion interprets speed and direction. Pressing your hand into a pillow will create radiating folds from a central point. We can quickly detect specific motions of the human body by the direction and emphasis that the folds create. There are recognized folds created by motions that are accepted by everyone. They become symbols of direction and emphasis.

The mass

A group of folds is not a mass of unrelated wrinkles. There is order among folds just as there is among any other forms. As in all art, good organization and relationship must be carefully adhered to. If the character of a draped form is best shown through a profusion of folds, then there "should be a profusion of folds." *BUT they must still be organized* and be logical in type and function, and they must reveal the nature of the underlying form. The mass of folds must not destroy the shape of the object beneath, and by mass we mean the total area of drapery regardless of its character, type or function. The mass must be consistent with the object it is draping; it must have composition, rhythm, tone, interval and texture—all the requirements of good design. All of the "activity" must not allow the folds to become important only in themselves. They should emphasize rather than dominate the form. The total form can many times be "lost" because of the interest in folds. To avoid this, study what the folds are doing as they relate to the form they are draping.

Procedure

It is best to proceed by looking at the whole mass of drapery first and by first catching the strongest emphasis, direction or curve. Then go on to the secondary or less important folds. This will keep you from losing the dominant fold and you will be proceeding in a logical manner. Do not become involved in detail before you have mastered the big problem. Detail is of no importance unless the basic structure and function is right. These must first be analyzed and understood. In this lesson we want you to understand the seven laws of folds. If you understand them, you have solved half of the problem of drawing them. But if you just look at the drawings and diagrams, you will be doing yourself an injustice. As you study these laws, always keep in mind these three things: 1. The laws of gravity, 2. The points of support, 3. The function.

Gravity—support and tension—function

All drawing of drapery radiates from these three words. If you can fix them firmly in your mind, they will act as a cure for drapery trouble. Also, memorize the seven laws of folds.

1. Pipe 2. Zigzag 3. Spiral 4. Half-lock 5. Diaper 6. Drop 7. Inert

Now we will show you how to apply these principles and laws.



First
The dominant folds



Second
The subsidiary folds

The laws of folds and their simple diagrams

Here are the geometric diagrams of folds. We show you these, stripped of all nonessentials, so that you may better understand the *basic* direction and structure of each one. Actually the different types of folds *do not* repeat themselves *exactly* — only the principles are repeated. These diagrams are the principles. We hope they will help you to see through the irregularities present in all folds, regardless of the type of fold, and allow you to see the structure.

Pipe fold

This is not an exact pipe, but a tubular-shaped fold. It must be drawn to have a cylindrical feeling.



Zigzag fold

One fold is fitted into the next. The folds are usually contrasting in direction, are repetitive and interlock.



Spiral fold

This fold is usually tubular in structure, but has a feeling of continuity in an ascending or descending manner.



Diaper fold

This fold is triangular in shape, dropping away in a curving manner from one point to another on a horizontal line. Sometimes this has an angular, rather than a curved change of direction.



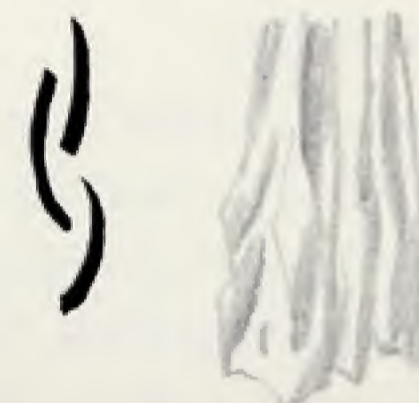
Half-lock fold

This fold is caused by a sharp change in direction. The emphasis is on the point where the direction changes and the slack areas meet.



Drop fold

Irregular dropping, creates numerous types of folds in the process. The emphasis is on the *dropping* action rather than on the detail of the individual fold.



Inert fold

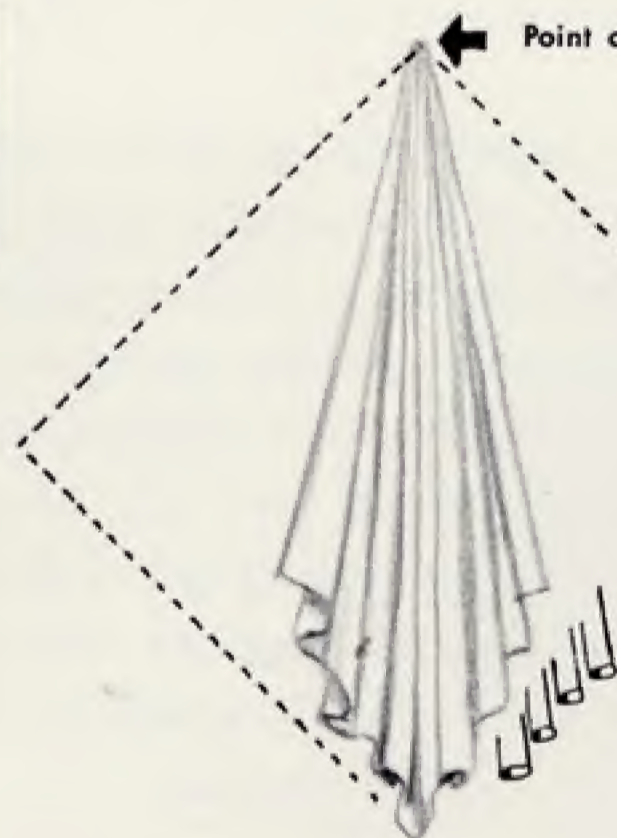
These folds are characterized only by the horizontal surface on which they are resting.



Pipe fold

The pipe fold is the simplest form of drape. It usually occurs from one point of suspension or when pulled between two points. Always draw this fold with the understanding that it is the *condensing* of a large area of cloth into a smaller area. It is usually influenced by gravity and is under no strain, having a more or less smooth, even flow.

Here we illustrate the pipe folds by stretching them between two points. The folds fan out and get larger at the center.



Point of support.

The dotted line indicates the approximate fullness of the cloth before gravity influences it.

The lower part of the folds shows their round, pipe-like structure.

A drape or curtain is gathered together at the top.

This is the area of cloth that is condensed in the drape by gathering it at the point of support.

The cloth looks like this from the end, which explains the pipe structure.



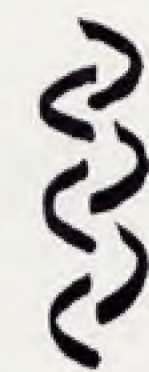
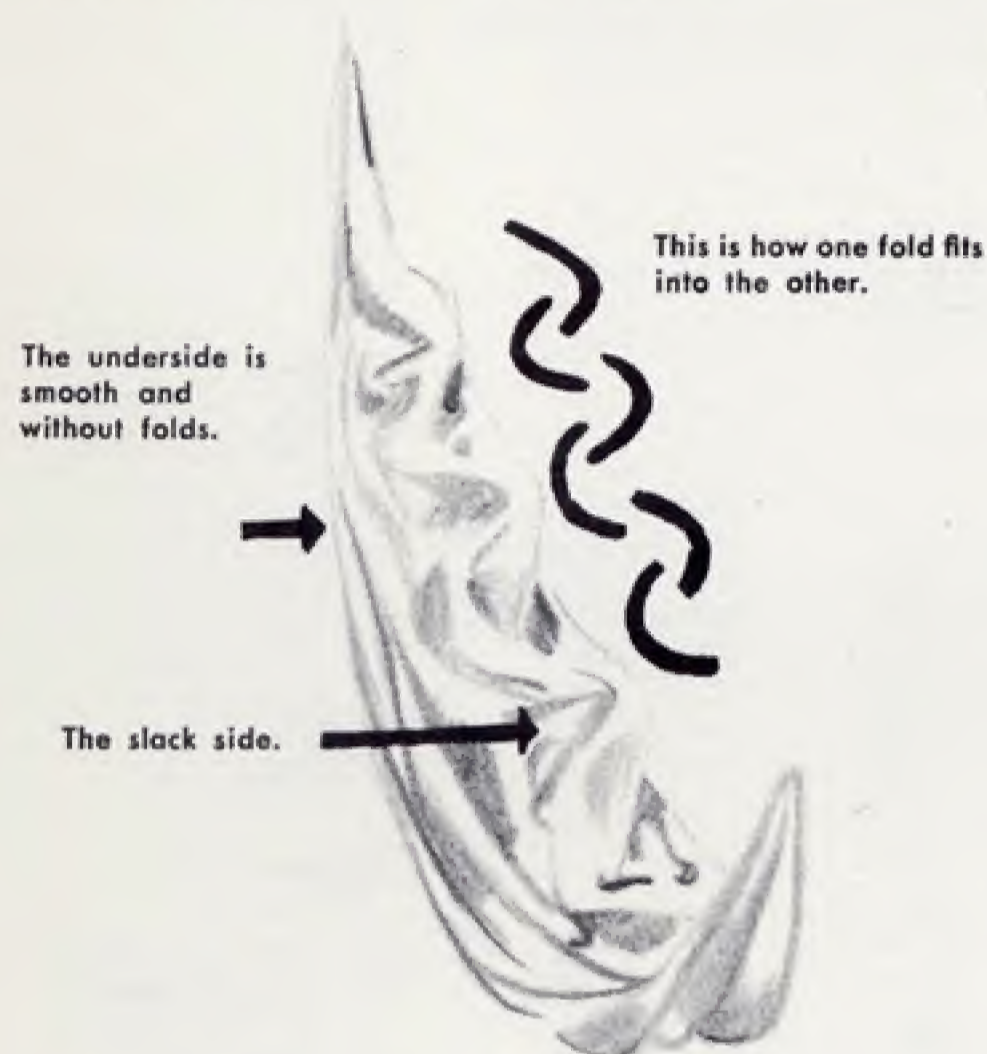
None of the cloth is removed. It is *only condensed*. Cloth *must* go somewhere. It has to fold.

The fullness in this garment is gathered around the waist, which is the point of support. The pipe folds gradually fan out and radiate downward. Folds in a garment will vary in width when the action of the figure changes.

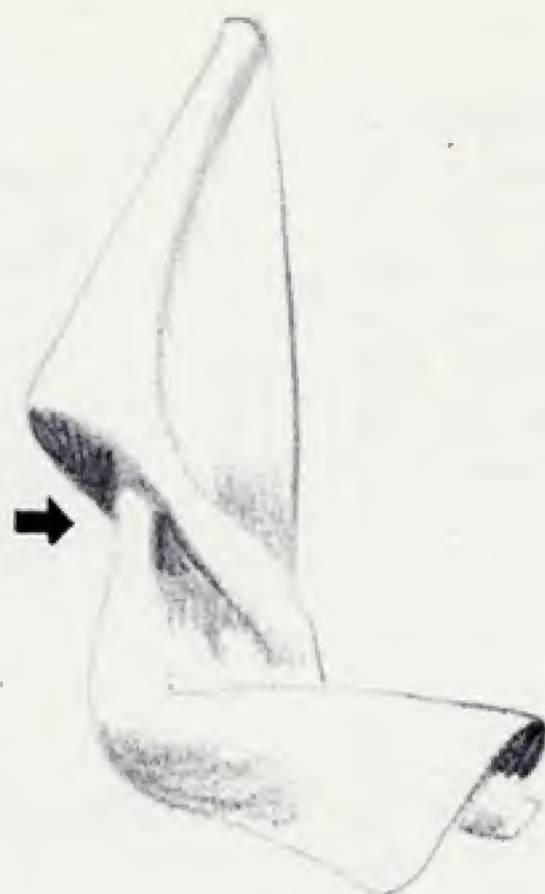


Zigzag fold

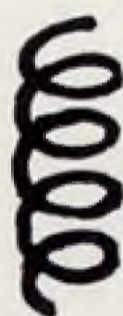
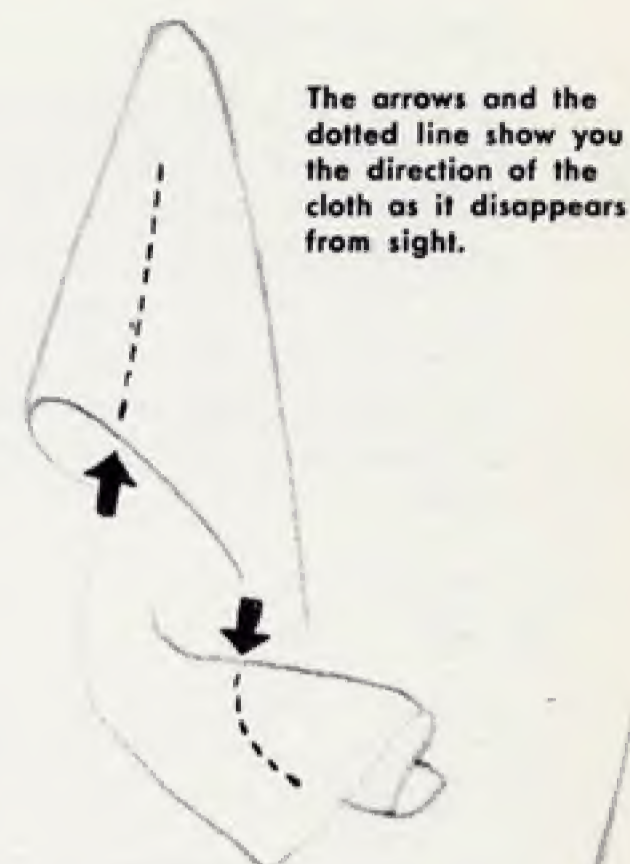
This fold usually occurs when a pipe fold is bent. The zigzag is on the slack side of the bend. This slack buckles in an uneven criss-cross way. It occurs because there is an uneven twisting of the fold that sets up a sharp, interlocking zigzag. These zigzags may not be even. The main thing is to keep the character and direction of the repetition.



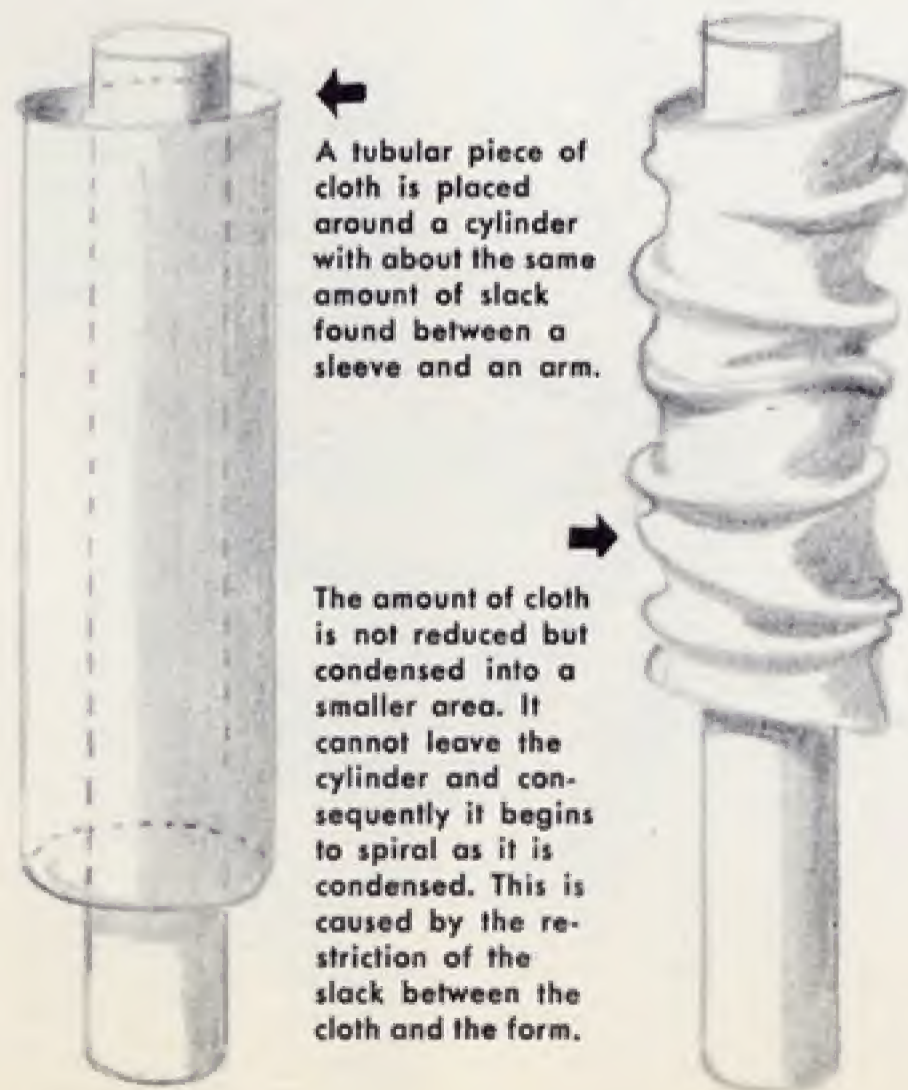
Study the way this part of the fold wedges into the next part.



Each slack section folds in contrast to the next one. It is caused by the twisting of the cloth.

**Spiral fold**

This fold is usually wrapped around a tubular form. It will change direction as the points of support and tension vary from place to place. Sleeves and trouser legs present good examples.

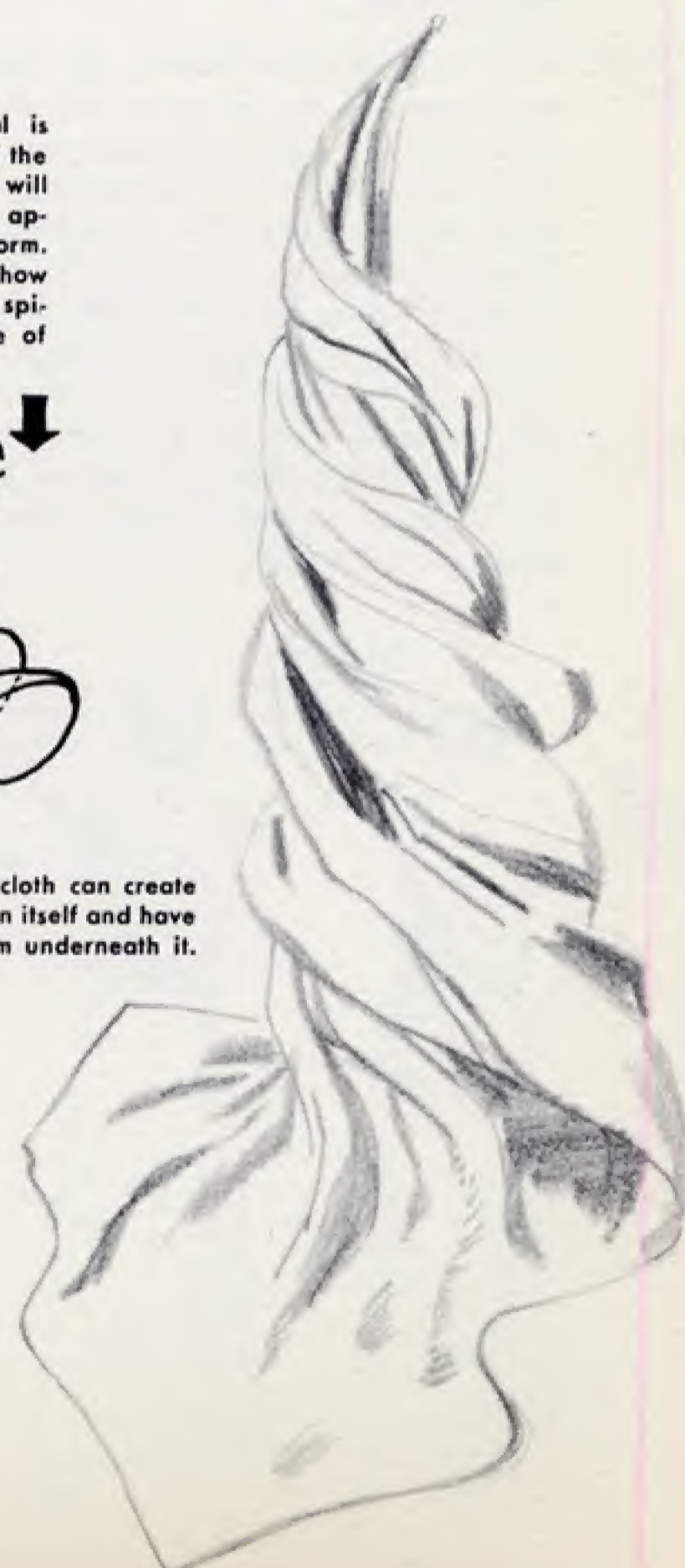


Notice how the spiral fold follows the form and changes its angle where the form changes its direction. When drawing, follow this "through" in the manner shown in the diagram in the upper right.

The direction of the spiral is toward the slight tension. If the tension increases, the spiral will tighten. Spiral folds must appear to revolve around a form. Study the diagram and see how the dotted lines follow the spiral around the unseen side of a form.

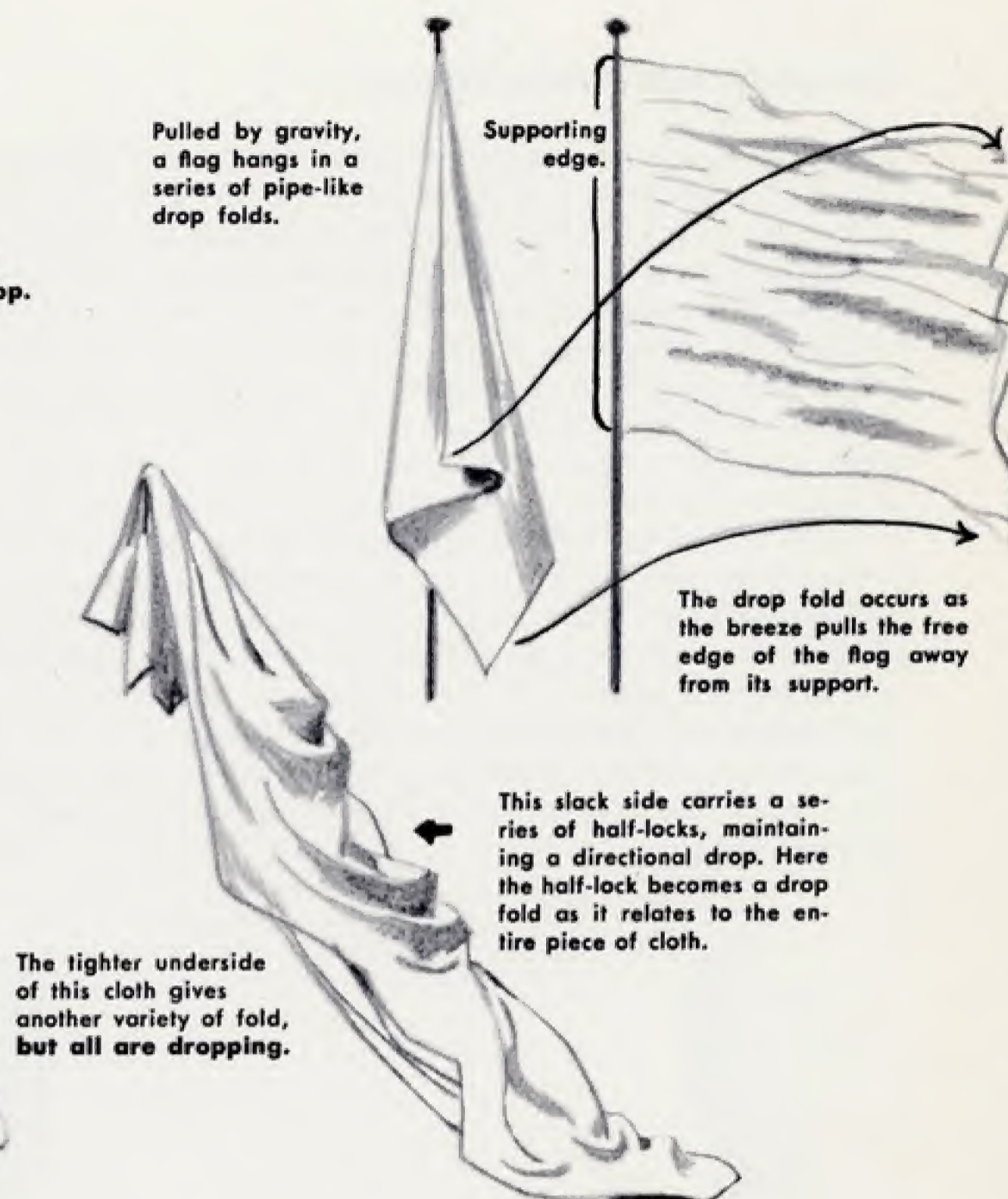
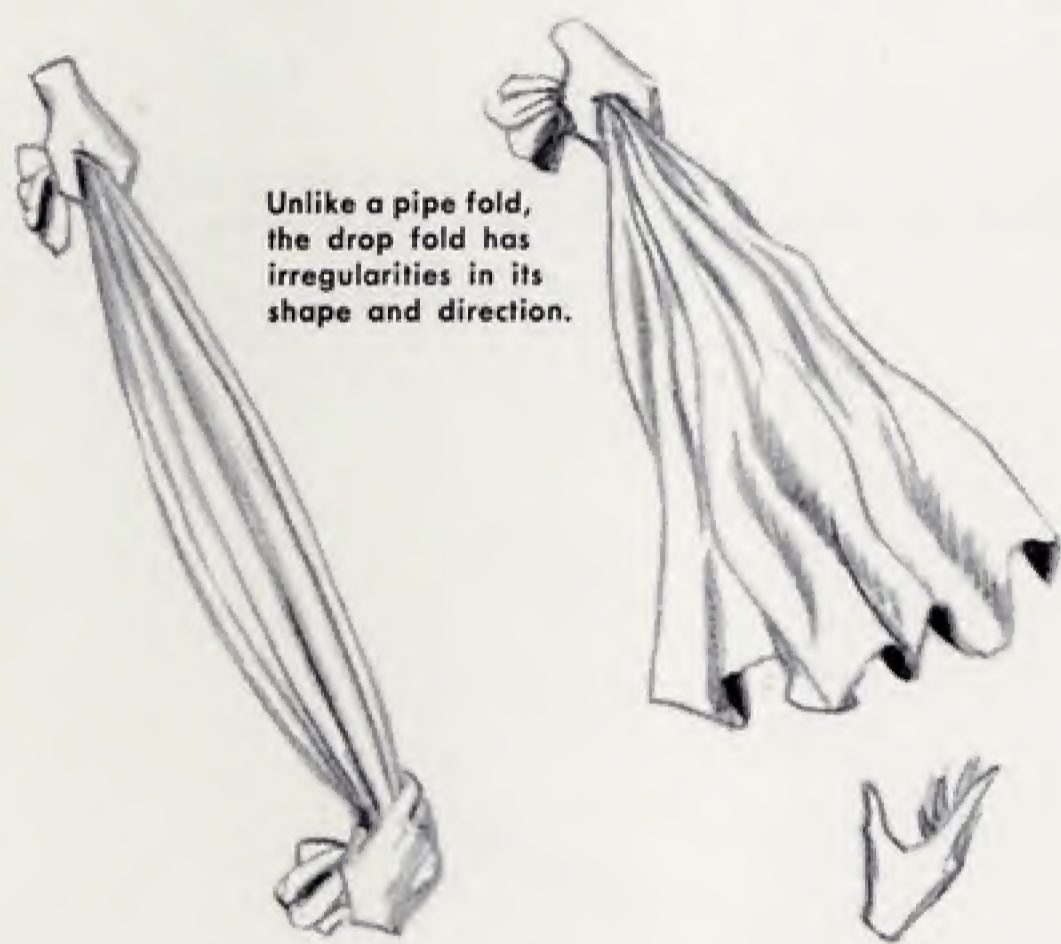


By twisting, cloth can create spiral forms in itself and have no solid form underneath it.



Drop fold

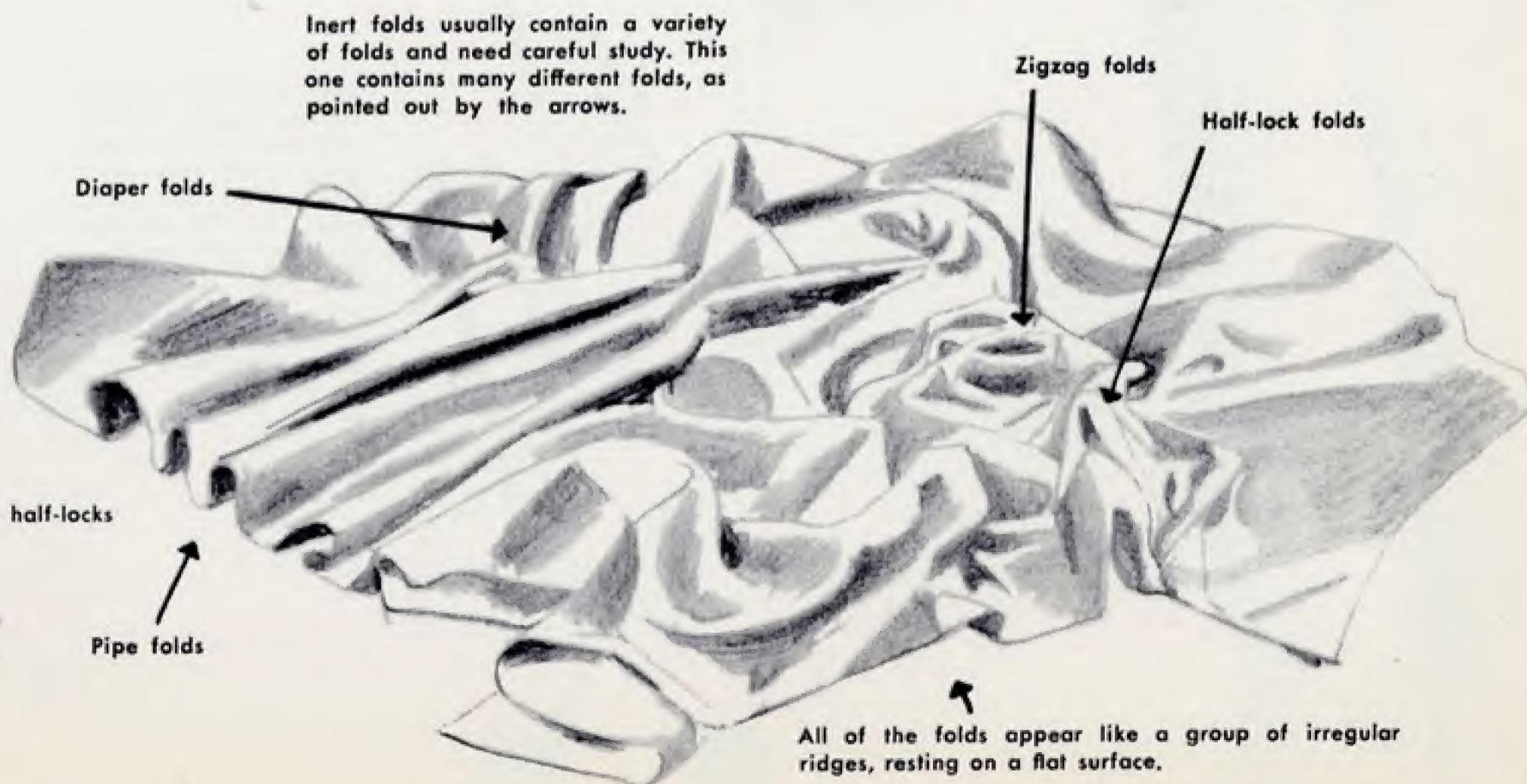
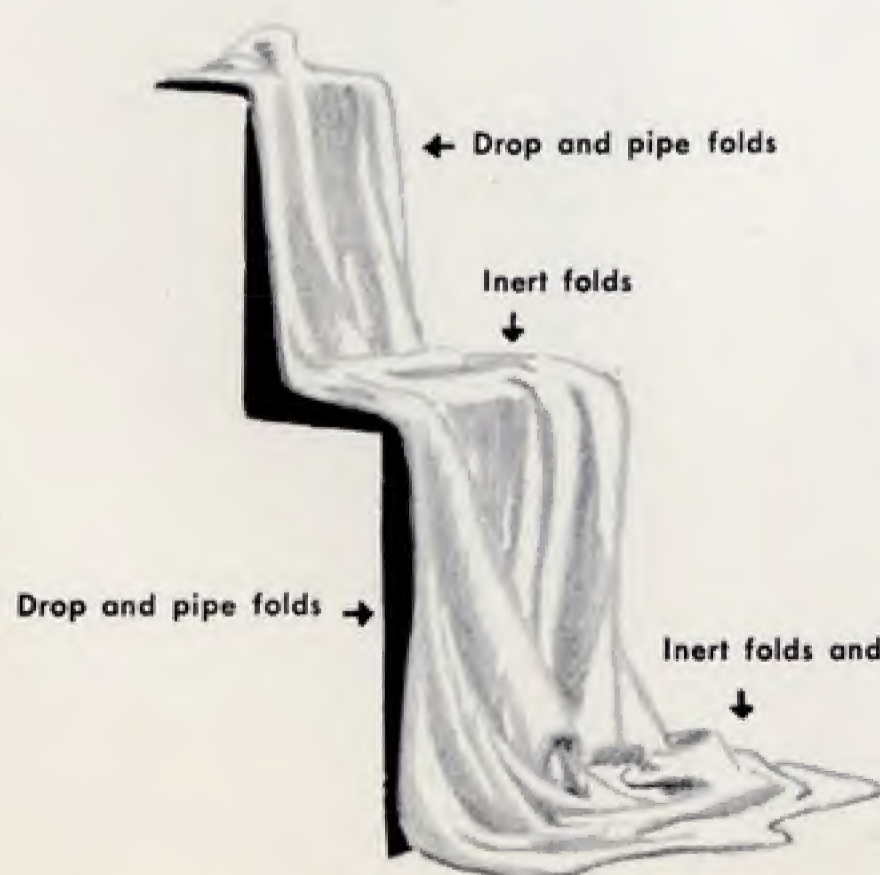
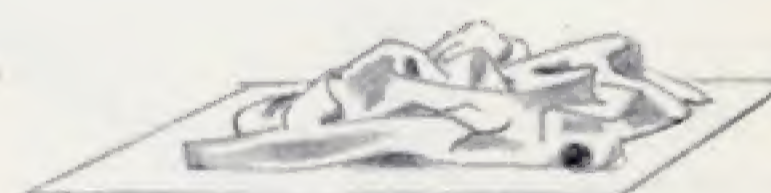
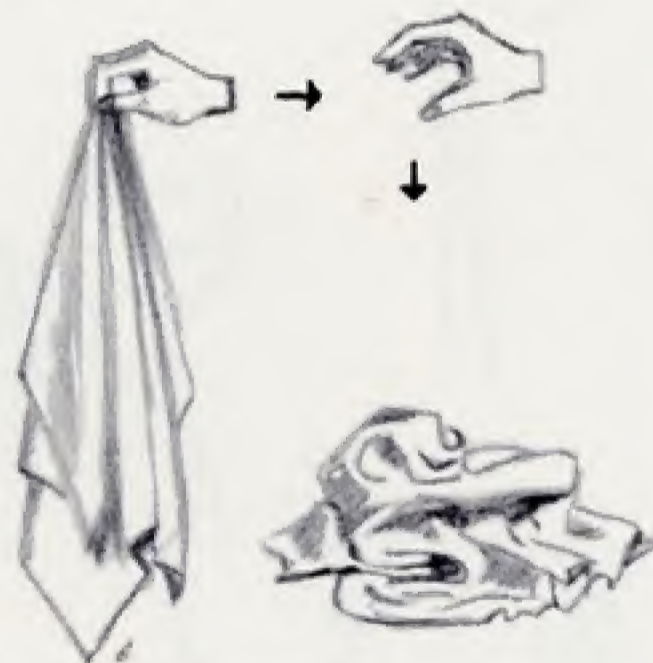
From a point of suspension, the drop fold twists, turns and staggers. Sometimes it hangs straight, like a pipe fold. At other times, a curved edge will give it a spiral effect. The important characteristic is that *it is dropping* – regardless of small folds that occur during the process. Drop folds will contain small zig-zags, spiral, and half-locks – but they all contribute to the entire drop of the cloth.



The tighter underside of this cloth gives another variety of fold, but all are dropping.

Inert fold

The best explanation of an inert fold is to call it a "dead" fold. We say this because it is not active, or in use, but lies inertly. It can have all manner of individual folds on its top surface. Its basic characteristic is that it is lying limp, on an inactive surface. Its over-all feeling and direction will be characteristic of the surface upon which it is resting.

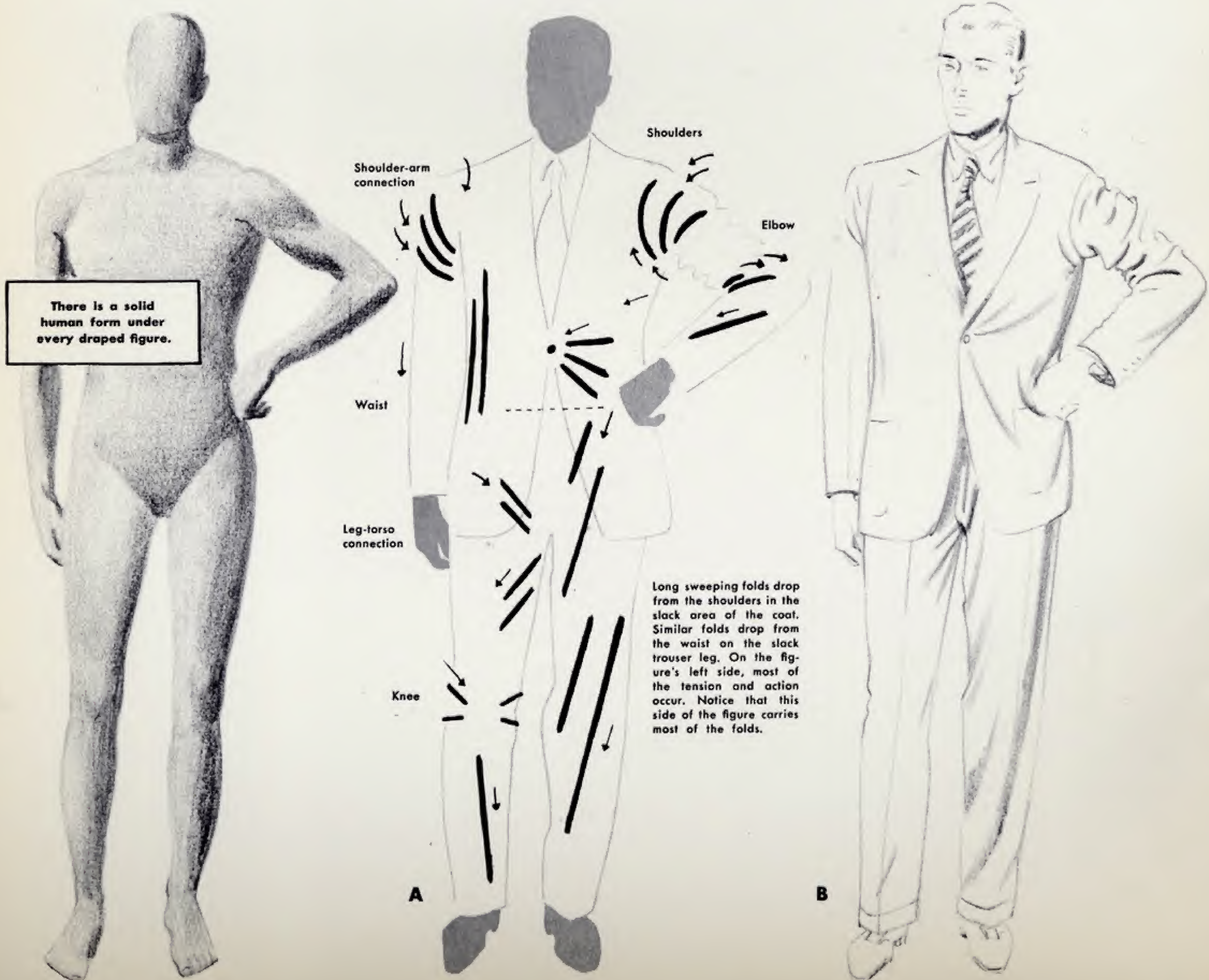


Draping the male figure

The folds in a draped figure are controlled by three factors: 1- The shape of the underlying form, 2- The action of the figure, 3- The cut of the garment. The folds caused chiefly by the laws of gravity are supported at two places: the shoulders and the waist. These folds are of a long and flowing nature. The folds caused mainly by tension occur at various points and are condensed in character. The main points of these folds are: shoulder-arm connection, elbow, waist, leg-torso connection and the knee. A study of the general character of each group of folds is necessary to drape the figure well. A garment is cut to clothe a figure and at the same time allow for its necessary motion and action. A garment is not just a piece of cloth, it is a cylindrical shape that is confined and has definite limitations of volume. A sleeve, a coat or a skirt is shaped to cover a similar form, allowing excess cloth for free use of the underlying form. When an arm, torso or leg bends or changes direction, the cloth slackens on the opposite side of the tension. This cloth obviously does not change in amount; it just condenses. As it condenses, it creates folds that behave in definite ways in different places. The way they behave is determined by gravity, tension, support and action. The captions and arrows on these pages need careful study. They cover the basic causes and directions of garment folds.



The shape of the form — the action of the figure — the cut of the garment are controlling factors in draping the male figure.



There are two basic points of support in draping the figure, the shoulders and the waist. All folds are controlled by these two points. On a standing, inactive figure the folds, influenced by gravity, drop with only slight irregularities caused by the changing contours of the body. In draping the male figure, the most important of these irregularities occur where the sleeve joins the shoulder and where the trousers meet the crotch.

From the outside edge of the shoulder, and from the protruding edge of the chest, the folds are pulled downward by gravity.

Although the trousers are supported at the waist, the wider point of the body at the hips becomes the actual point from which the folds fall downward.

As the shoulders and hips change position by a shift of balance to one leg, the points of support also change position and create a different tension. The dark arrows show the direction of the flow of folds which descend from the highest point of support and strongest points of tension.

Folds radiate from the protruding edge and follow the direction of the form.

In a tight, enclosed garment, such as a skirt or trouser leg, the folds fall diagonally, following the contour of the form. Below the point of tension, and on the side of the point of support, a slack area occurs.

Point of support

Point of tension

Slack area

Point of support

This edge is always slack, being opposite the point of tension and on the side of a point of support.

The farthest protruding edge becomes the point of radiation of the folds, although it may not be the actual point of support.

When the coat is buttoned, a group of tight condensed folds occurs at the shoulder-arm connection. They radiate in a curving direction from the shoulder to the point of tension at the button.

The condensed folds that occur at the shoulder have pulled the free edge at the cuff of the sleeve inward toward the body.

The leg slants diagonally from the hip. The outer side is the tension side, and the folds will take the direction shown by the arrows to the upper point of support at the waist. The inside edge drops away, influenced by gravity.

Folds bunch and condense on the slack side of a form opposite the tension edge.

Study here how the direction of the folds follows the direction of the twist and action of the body.

The trouser

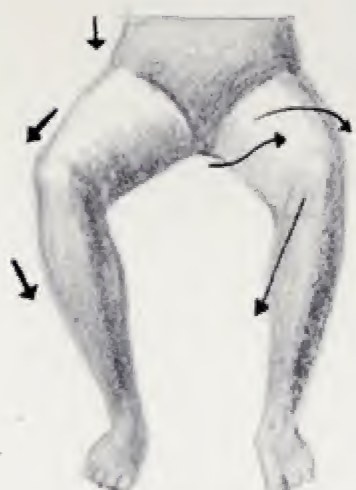
The high place of support is at the waist. The greater width of the hips affects the folds because they become a radiating point of support. You must **always** think of the form that the trousers are draping or you will have no success in drawing folds. The lower body is cylindrical. Trousers are made to cover the cylinders with sufficient slack to allow freedom of action. The drape of the cloth must go around the form, and also obey the laws of gravity, support, tension and function.



This quickly shows the folds descending from the point of support to the tension edge. This causes long sweeping pipe and drop folds which designate the action of the figure.



Trousers are supported at the waist, but "hang" from the hips and buttocks. The pressed seam drops straight down due to gravity. Other slight sweeping folds follow the contour of the limbs.



Trousers are cut to fit the leg from the waist down with allowance for freedom of motion.

The leg on the left is straight. The other is bent at the knee. The change of direction creates half-lock folds on the under or slack side of the bent leg. Where the leg on the left joins the torso, other tight, half-locks and pipe folds occur.



The spiral folds condense at the leg-torso connection and follow the direction and shape of the upper leg. Pipe folds occur from the knee down.

The leg on the right is bent slightly back. This causes a "pull" from the support point at the waist. A long, sweeping pipe fold descends to the calf. The tension causes small spiral folds at the buttocks.

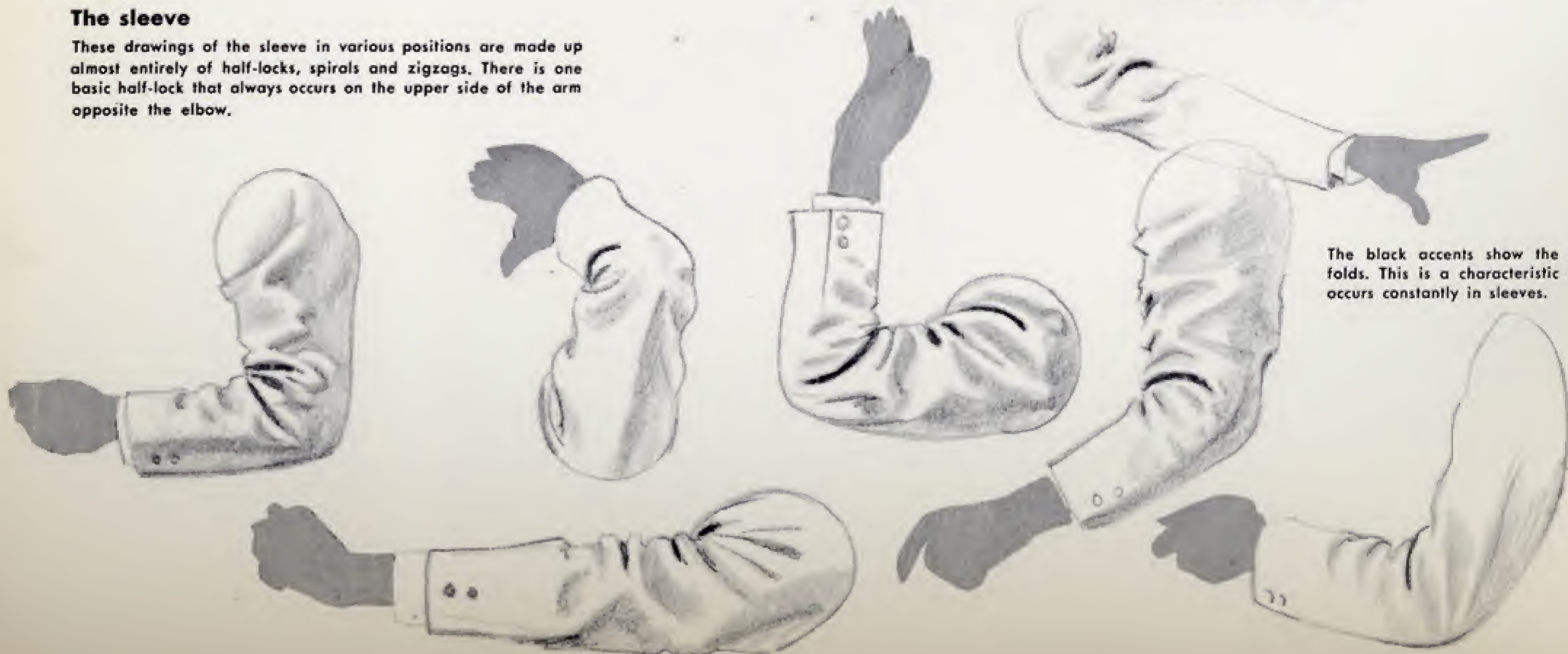


The trouser folds are pulled downward from the top side of the leg by gravity and tension. They can only descend as far as the volume of the garment will allow.

The three arrows point to the three important folds, the top ones forming as the leg starts forward, the lower ones starting where the knee changes direction, the other shows a long sweeping fold without tension.

The sleeve

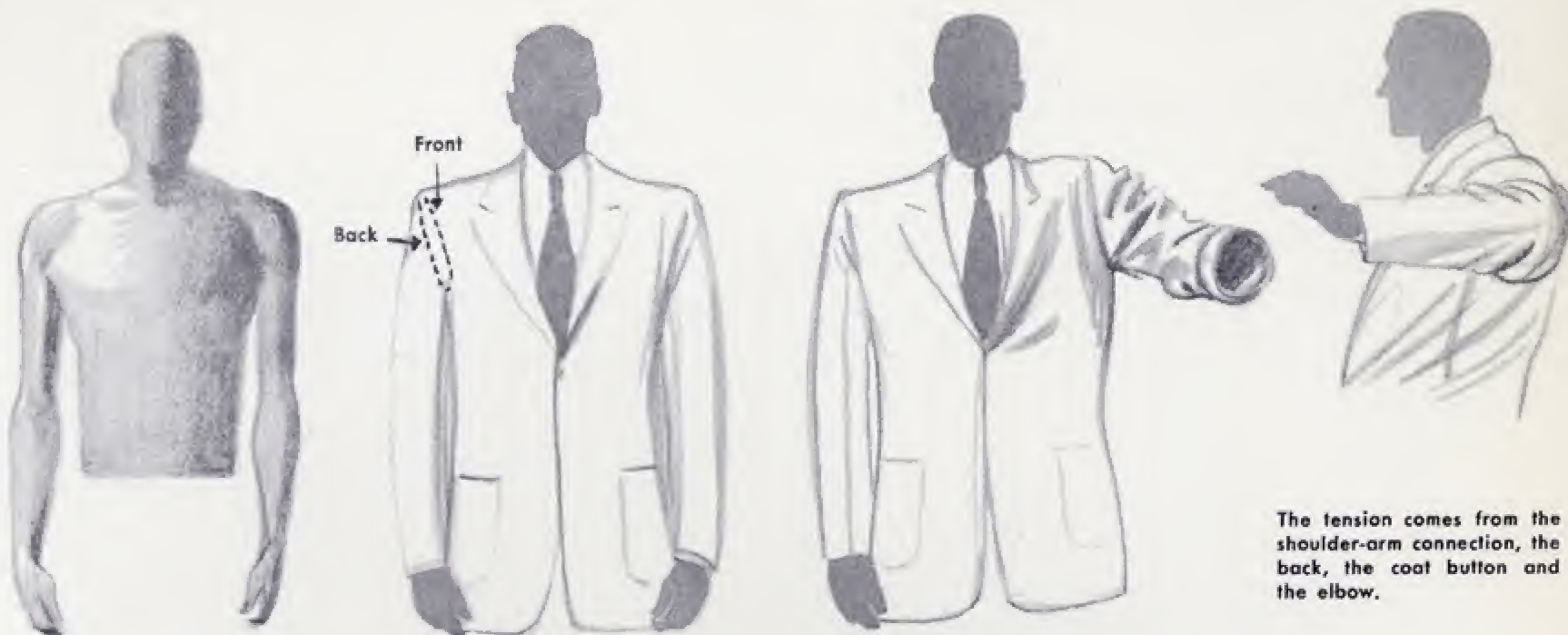
These drawings of the sleeve in various positions are made up almost entirely of half-locks, spirals and zigzags. There is one basic half-lock that always occurs on the upper side of the arm opposite the elbow.



The black accents show the half-lock folds. This is a characteristic fold that occurs constantly in sleeves.

The coat

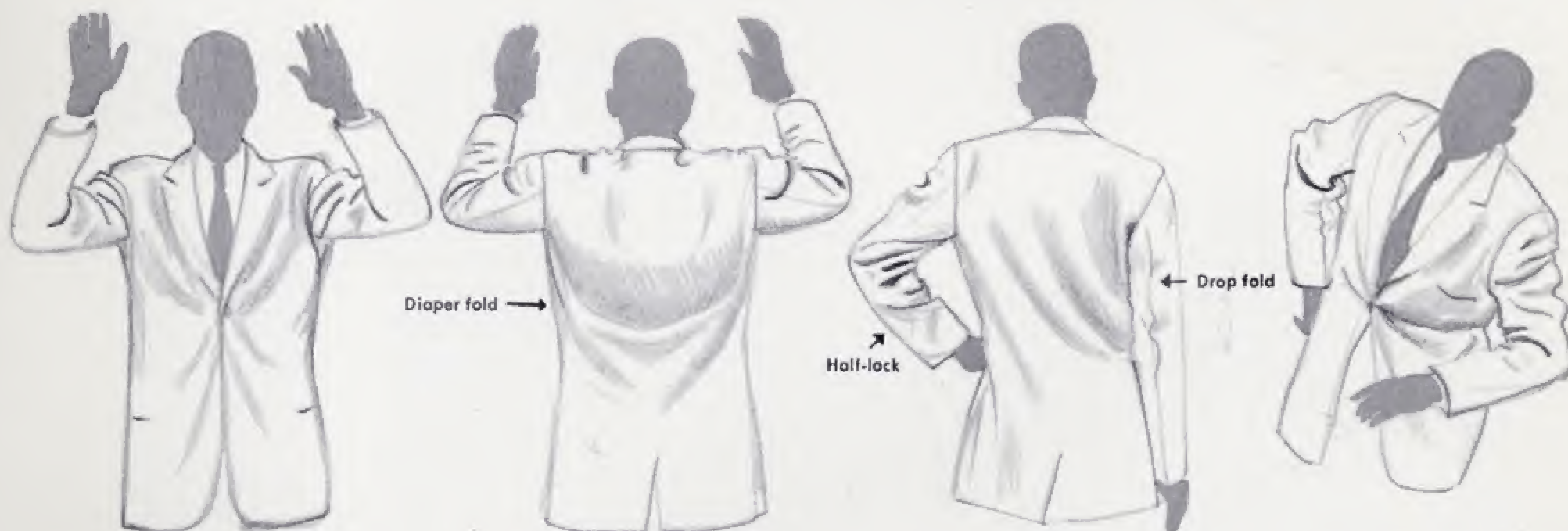
The coat or jacket is supported from the shoulders. Its range of folds is greater than the trousers, first, because of the increased action of the arms, second because it can be buttoned or unbuttoned and third because of the greater variety of garment design. The form and action of the torso and the arms must be understood to draw these folds correctly. The shoulders and arms create most of the folds because of their greater range of motion when compared to the limited range of the torso action.



The tension comes from the shoulder-arm connection, the back, the coat button and the elbow.

The coat is supported from the shoulders and descends with few folds. The sleeve sets into the body of the coat on an angle where the arm and shoulder join.

When the arm is lifted, a tension occurs on the cylindrical sleeve that condenses the folds at the armpit in spirals and half-locks.

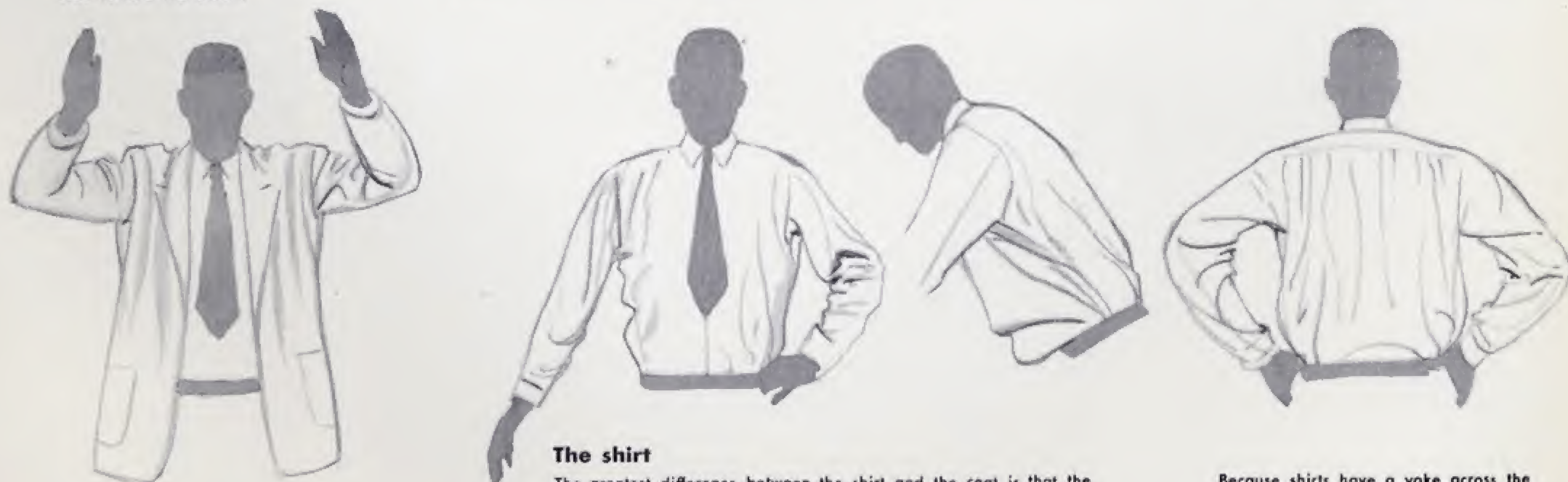


The arms raised in a buttoned coat cause folds to descend from the shoulders to the button and from the button outward toward the pockets. With arms raised, spiral folds radiate around the upper arm from the inside to the outside toward the elbow.

The tightness of the sleeve fitting at the armpit causes the entire coat to raise upward when the arms are lifted. This creates a group of diaper folds which cross from the two supporting shoulder points.

In this quartering view of the back, study the long sweep from the high shoulder, halfway down and across the back. This is a constantly recurring fold when an angular tension is created.

Notice the very large half-lock fold that occurs at the waist button position on the coat. This occurs because the figure is bent sideways and there is a great deal of slackness in the garment.



When the coat is not buttoned, the folds taper out toward the bottom in a free sweep from the shoulders.

The shirt

The greatest difference between the shirt and the coat is that the shirt is held rigid at the waist. The shirt is full and contains drop folds and pipe folds of great variety radiating from the waist to the shoulders. They vary in character in relation to the degree of tension present. A twist of the body will sometimes give them a tight spiral character, while a relaxed attitude, will create numerous diaper folds.

Because shirts have a yoke across the shoulders, folds descend from the yoke to the waist rather than from the top of the shoulders. These are pipe folds and drop folds. A change of tension caused by the lifting of the arms will change them to diaper folds.

Draping the female figure

Regardless of the wide range of cut and style in women's clothes, there are fundamentals that cannot be changed. A dress is supported from the shoulders, extends out over the bust and descends due to gravity in drop and pipe folds to its hem. It may be gathered at the waist and fall from the bust to the waist, to the hips — and then descend. Or it may be a separate blouse and a skirt. The skirt extends out from the waist and falls due to gravity from the point of largest circumference at the hips. This is traditionally a female costume, just as a man's costume is a coat, trousers and shirt.

Because of the variety in female clothing you should always sketch in the form of the figure first, and then drape the form. This gives you something to build on. It will be much easier for you to find the different points of tension and support and have the folds correct if you draw the figure first. The variety of volumes of cloth in different cuts of female garments makes this procedure necessary. Always follow the fold "through." That is, draw it completely around from start to finish by drawing its volume, its depth and its contour. When you do this, the fold that is controlled by tension will follow the form. Those controlled by gravity will find the protruding edge and descend.

When the arm is straight down, the folds spiral from the armpit forward around and up toward the outside point of the shoulder.

On the female figure, the protruding busts create tension and a radiating point for folds. They radiate to the shoulder, the back and to the waist, or in a loose garment descend downward toward the hem at the bottom.

The relaxed leg extended slightly forward becomes a light point of tension and influences the angle of the folds, radiating from the high support point at the hips.

The sleeve "goes around" the arm. Here the tension is from the underside at the armpit. If, however, the arm were extended vertically, the sleeve would drop down toward the shoulder in spiral and half-lock folds.

This is the point of support for the torso from the waist as this hip is higher and supports the body, the other leg being slightly extended and relaxed. This is the tension and support point for the diagonal, descending folds.

From the hip, large descending folds follow the line of the leg. They cannot fall straight as there is a tension running from the opposite lower leg to this hip.

This is the slack area of the skirt that swings down and out from the support point of the raised hip.

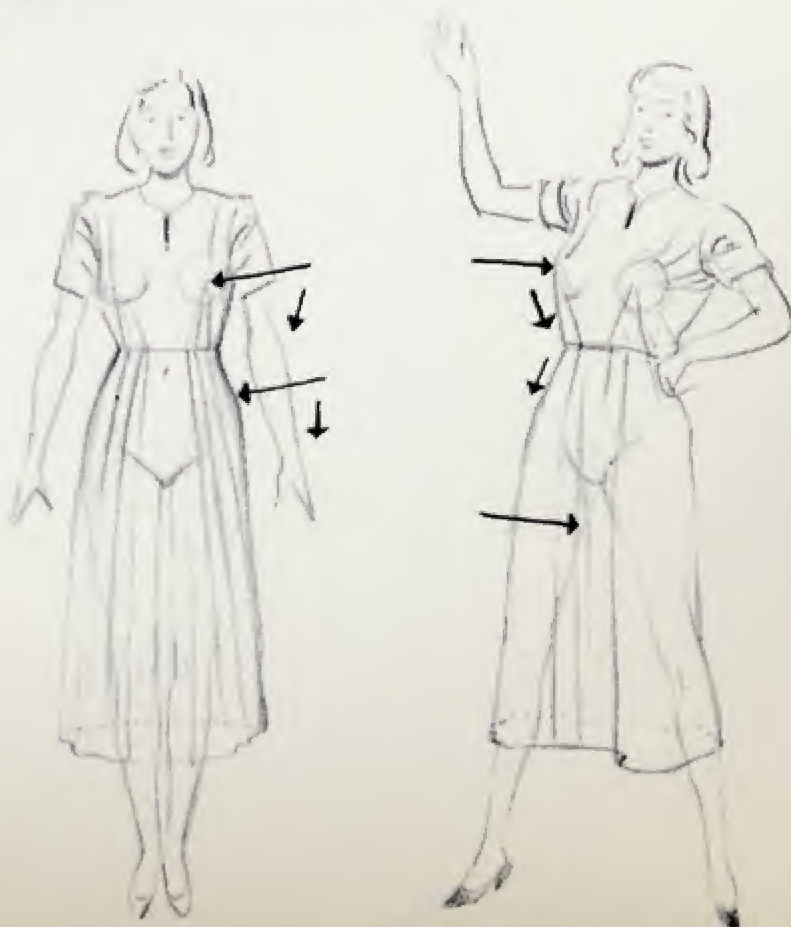
Basic things to study and remember when draping a figure.



The Form — The Action — The Garment
You must remember these three things to drape the figure correctly.



If this simple garment were placed on a figure, it would hang straight—as shown at the right. Below, we show it gathered at the waist, which has caused the cloth to condense into pipe folds and puts a tension over the bust. Below and to the right, the figure has moved, with legs apart and the figure slightly bent back. In this stance the cloth drops from the bust over the stomach and falls between the legs. Study the outlined figure beneath and also follow the dotted line which shows the contour and volume of the bottom of the skirt.

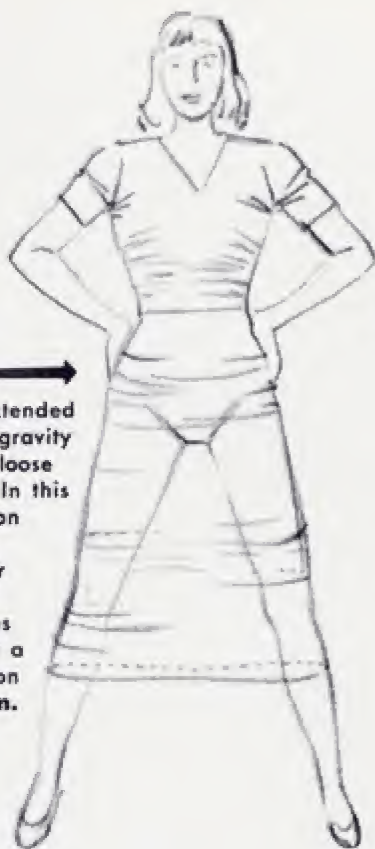




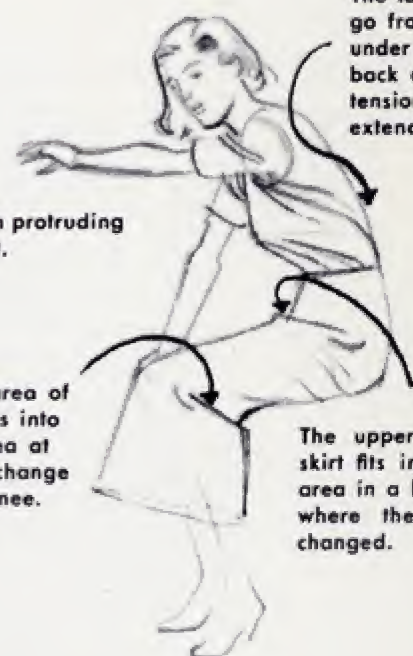
The two arrows indicate the two points of tension. Study the direction of the folds, from their fixed support points to the points of tension.



Even with legs extended the folds fall by gravity as shown on the loose dress at the left. In this posture the tension points on a tight dress are stronger than the support points. This causes the folds to go in a horizontal direction around the form.



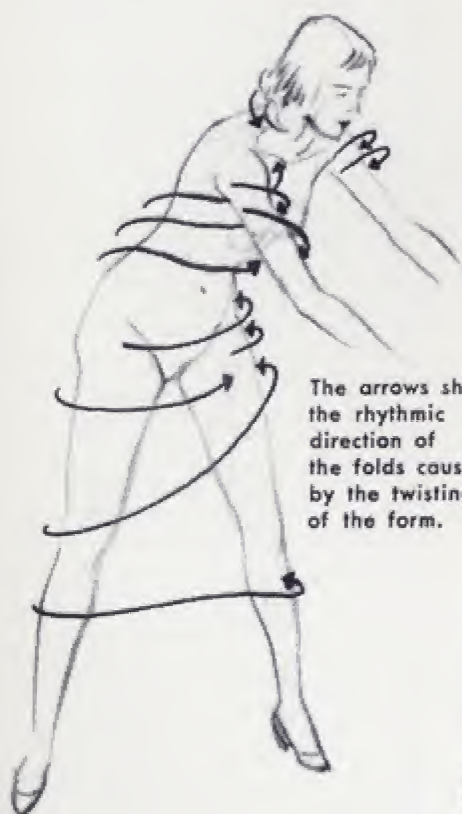
The tension is from protruding busts to the waist.



The large tight folds go from the shoulder, under the arm, to the back at the waist. The tension is against the extended arm.

The middle area of the skirt locks into the lower area at the direction change behind the knee.

The upper area of the skirt fits into the middle area in a large lock fold where the direction is changed.

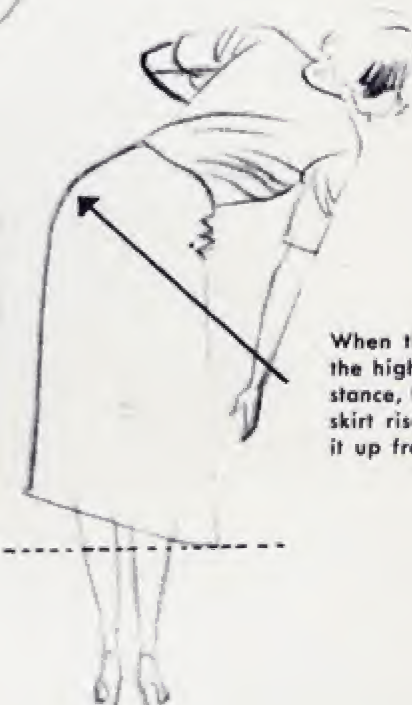
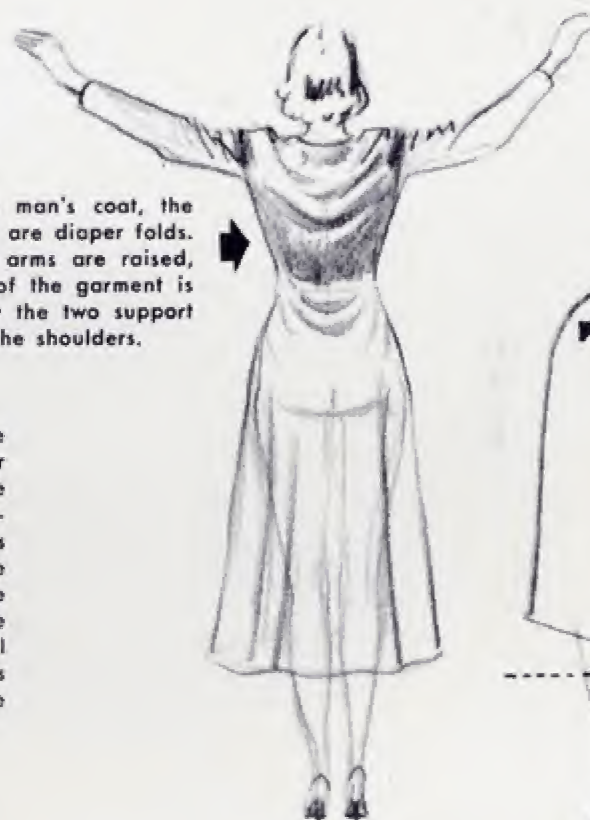


The arrows show the rhythmic direction of the folds caused by the twisting of the form.



All of the tension points are under strain. On the upper torso, the folds go from the back, up and under the extended arms. The strain is also from the back to the point of the bust. Because the legs are extended the folds are more horizontal since the strong tension is from the outside edge of the legs.

As in the man's coat, the back folds are diaper folds. When the arms are raised, the slack of the garment is created by the two support points at the shoulders.



When this becomes the high point in a stance, this side of the skirt rises, which lifts it up from the floor.

The suit

In the jacket, the folds are similar to those in a man's coat, with the exception of the extended bust. In figure 1, notice that the folds on the upper arms are "soft" folds without much strain, showing a generous amount of cloth from elbow to shoulder. The skirts on all three figures are creating long folds from hip to knee. The weight in each case is on the right leg, with the left knee extended. You will see that this makes a slight difference in the edge of the folds because each skirt is cut slightly different. In figure 3, the side view shows a long fold coming from the waist, following the contour of the leg. This is caused by tension created at the waist as the figure bends slightly back.



1

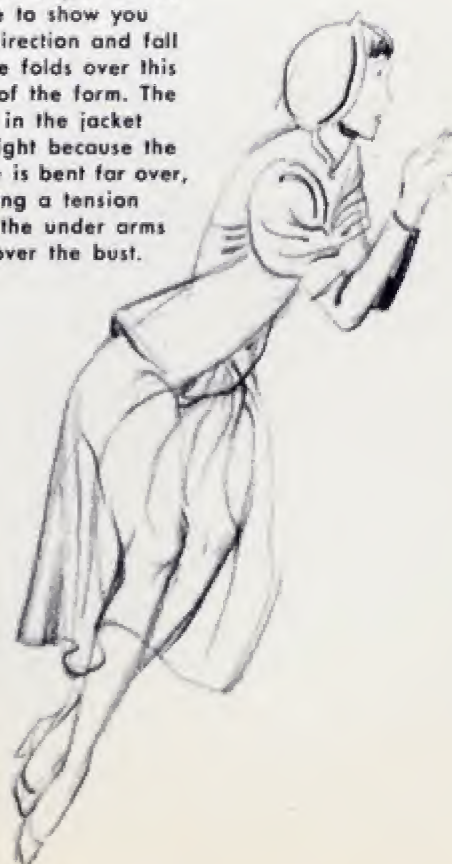


2



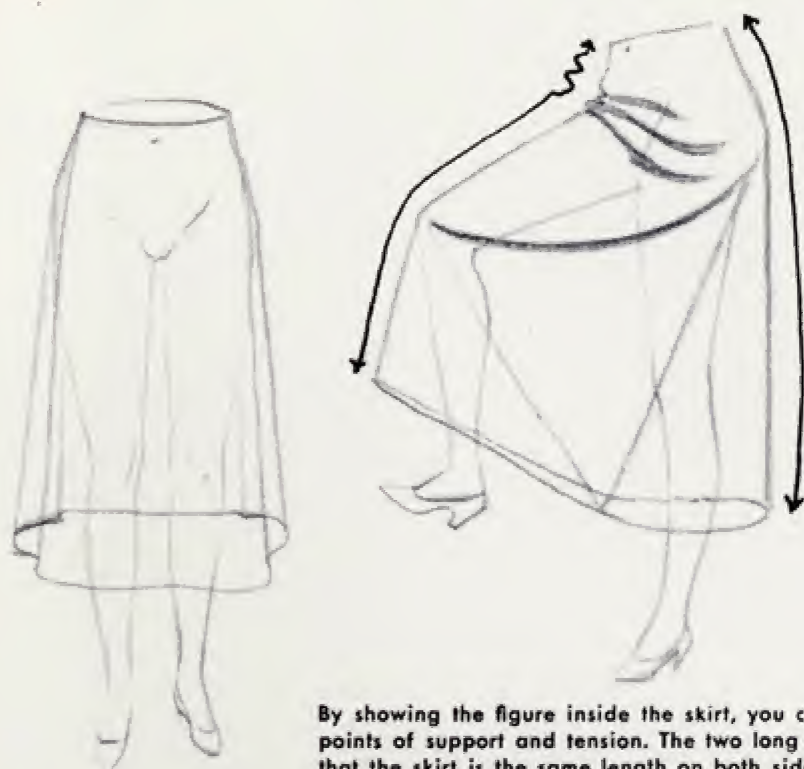
3

We have drawn in the lower part of the figure to show you the direction and fall of the folds over this part of the form. The folds in the jacket are tight because the figure is bent far over, creating a tension from the under arms and over the bust.



The skirt

Basically, the skirt is a cylindrical piece of cloth, narrower at the waist than at the hem. It must accommodate the lower portion of the figure. If you will study the diagram at the right, you will see how the form looks below the skirt. You must always be conscious of this underlying form, as it governs all the folds of the skirt through the action and stance of the figure.



By showing the figure inside the skirt, you can study the points of support and tension. The two long arrows show that the skirt is the same length on both sides. The basic points of tension here are at the knee of the extended leg and the hip. This creates a long, sweeping diaper fold from knee to hip in the slack area of the skirt.

By studying the underlying figure you can see how these protruding edges affect the folds.



As the hand lifts this full skirt, several large diaper folds occur. The points of support are the hands, the hips and the waist.

This shows a fitted dress with a reasonably full skirt. By cutting the garment to fit the bodice, points of tension are reduced to a minimum. From the point at the waist the dress fits out over the hips and the looseness of the skirt from there to the hem causes most of the folds in this type of garment, with the exception of those occurring around the arm-shoulder connection at the sleeve.



Pipe folds from the shoulder to the point of the bust down to the waist, and from this point also down around, toward the back at the waist.

The tight dress shows the many points of tension quickly because it hugs the form. This causes endless small folds radiating from the tension points.

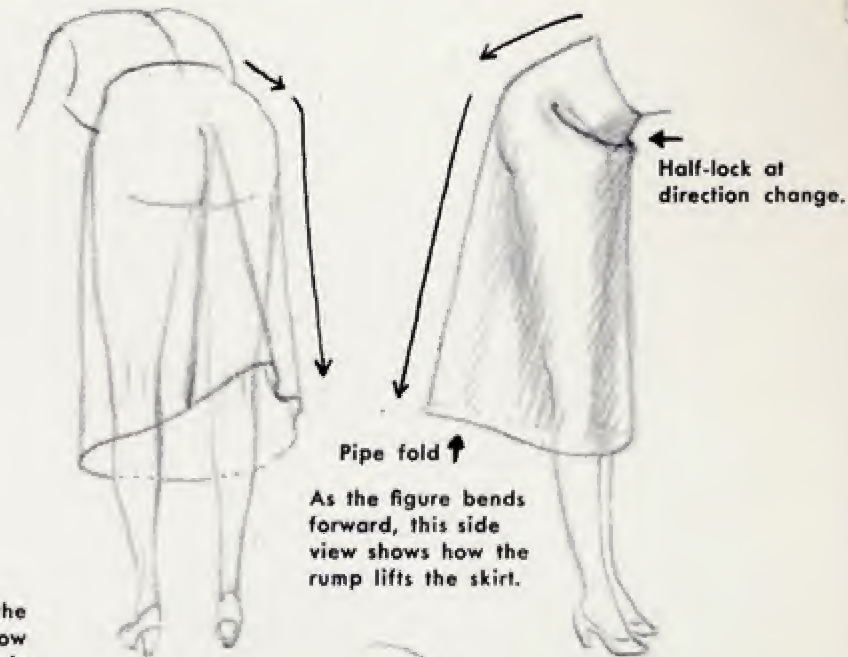
The dress is fitted at the waist. The skirt has four, large pipe folds caused by the design of the skirt. Contrast this with the gathered, pleated skirt on the figure at the right.



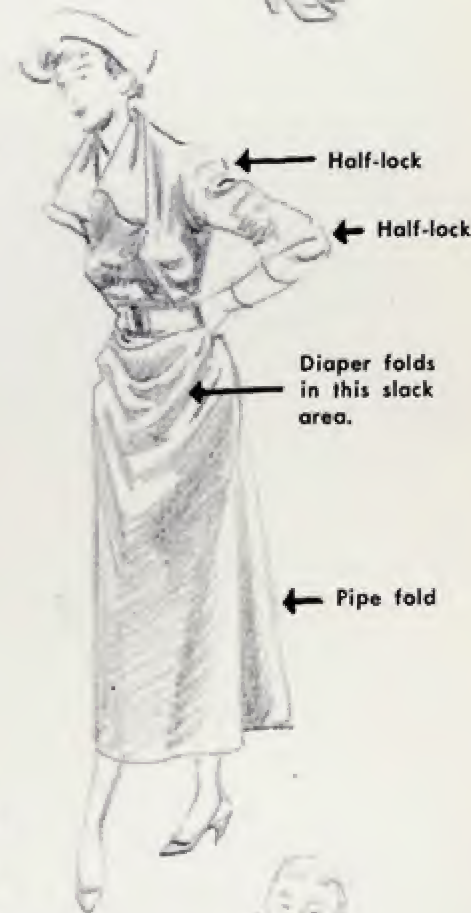
A very full skirt made of soft material gathered at the waist will fall into numerous pipe folds.



As the figure leans over, the skirt lies flat on the rump for a short distance before it descends. This forward extension of the torso has caused the skirt to raise in the back. Usually one or two large pipe folds drop from the protruding edges at the buttocks.



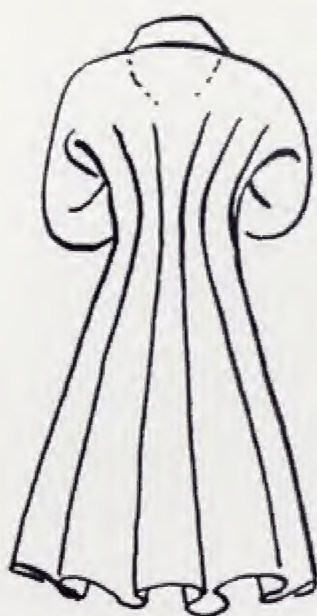
As the figure bends forward, this side view shows how the rump lifts the skirt.



The stance of a figure changes the behavior of the folds. If the hips are on an angle, the high hip will pull that side of the skirt up. If the skirt is tight, diagonal folds will occur from the high hip toward the outer leg. In a full skirt, as pictured above, there is little tension because of the fullness, and the folds fall directly down.

The coat

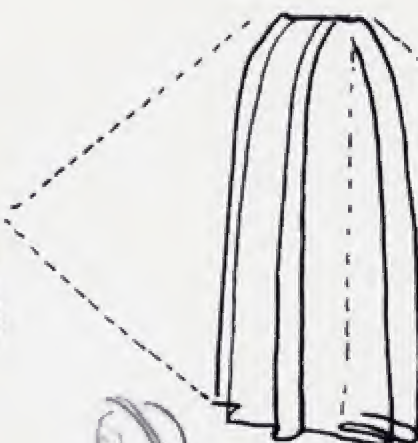
Study a coat first as a large unit. It is either gathered at the waist, hangs directly from the shoulders or is form fitting. You must first capture its basic characteristic. The diagrams show the approach to the coats illustrated. Study them in relation to the drawing below each one.



A series of pipe folds narrowing at the waist.



The simplest analysis is just three tall cones.



It is fitted tightly over the shoulders and large pipe folds descend from the bust.



Draw the figure first. Then draw the coat, emphasizing the folds. Start from the shoulder, come in to the waist and out toward the hem. Always feel that these are pipe folds, round, tight and gathered at the waist, getting wider as they descend toward the hem.

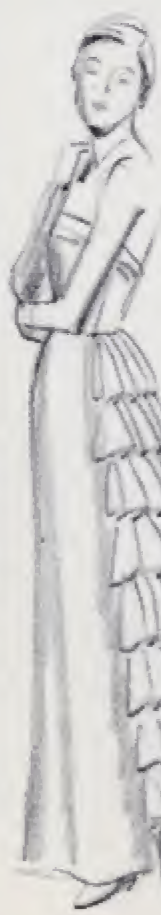
These folds drop out and down from the top of the shoulders. You should think of a cone or cylinder that is wide at the bottom and narrow at the top. Study the analysis shown in the diagram.

Here the pipe folds fall in a flat manner, caused by the design of the garment. They are still pipe folds, but are flattened. Notice how the collar goes around the neck, returns and is pulled through an opening. As the cloth condenses in this opening, a fold occurs on each side.

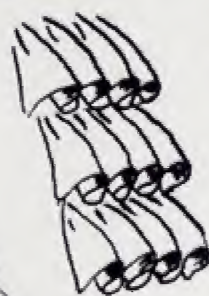
This shows how a certain type of design of garment will cause all of the folds to drop from the neck-shoulder position. The bust, protruding in the front, here governs the fall and direction of the folds as they descend.

The formal gown

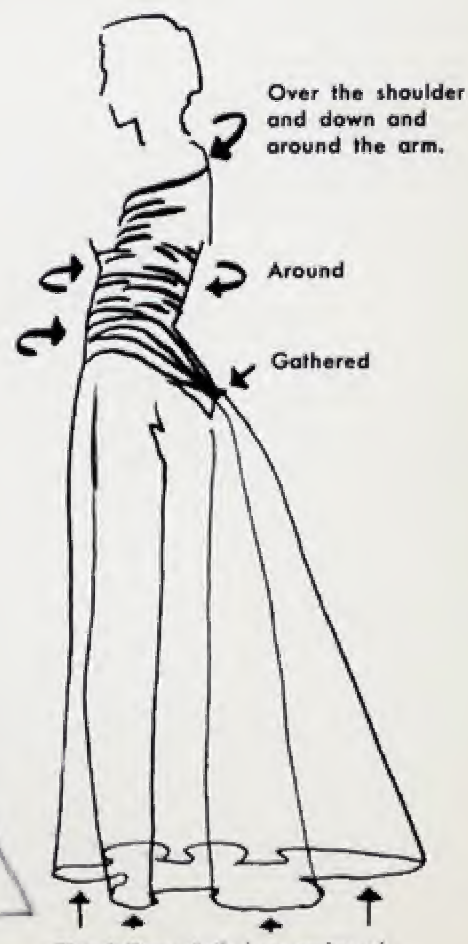
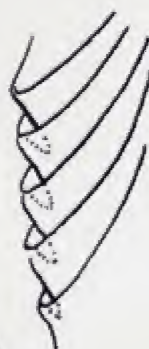
You must analyze the basic motive, direction or character of a fold first. We diagram the novel features of each of these gowns. You will see that a very simple form is sometimes the basis for an elaborate set of folds. By understanding this, the final drawing of the gown becomes simple.



A series of pipe folds, gathered at the top produces a bell-shaped appearance.



Diaper folds. The cloth dips in and out in a series of peaks and valleys.

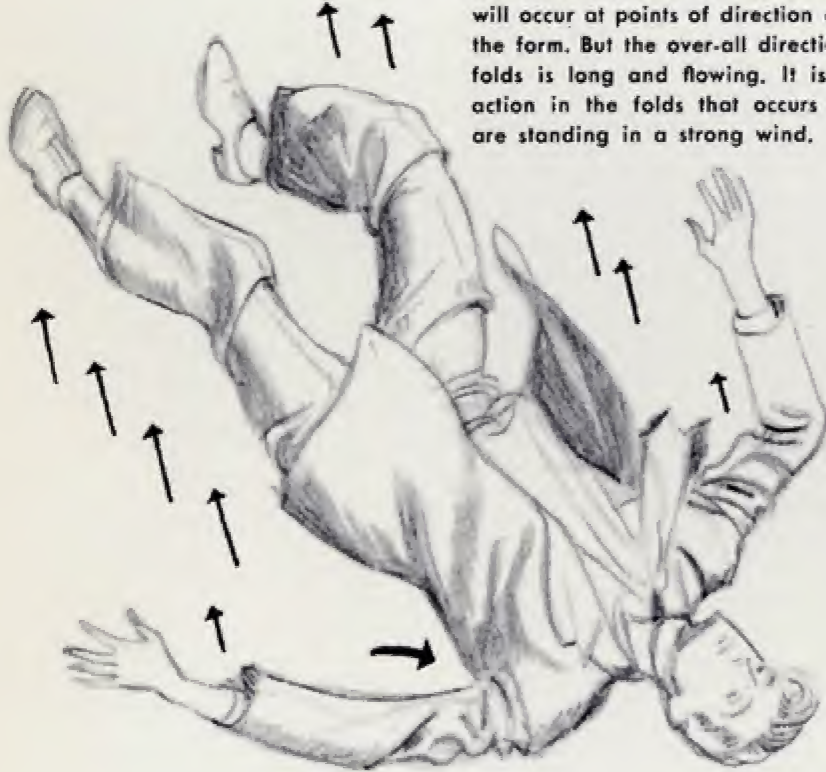


This fullness falls in a series of large pipe folds. Study the curves as we show them in the diagram.

When a figure is moving rapidly forward, the front of the body, the arms and the legs, become a wall of tension. The direction of all folds is back, down and away from the forward edge of the wall of tension. They are usually pipe or drop folds. Where the slack of a trouser leg occurs when the leg is lifted, diaper folds and half-locks are created. The crotch and arm-shoulder connection continue to have light pipe folds and half-locks. All other folds are rhythmic and directional and are of a loose-flowing nature.



When the figure falls, slack areas trail away from the direction of motion. Half-locks will occur at points of direction changes in the form. But the over-all direction of most folds is long and flowing. It is the same action in the folds that occurs when you are standing in a strong wind.



The forward leg will gather soft half-locks and spiral folds as it moves forward. This is caused by the cloth being "thrown" slightly ahead of the leg proper. The back leg will carry a long sweeping pipe fold starting at the front of the waist and flowing in a curve toward the foot. The tension is on the front of the forward leg, and the back of the trailing leg.

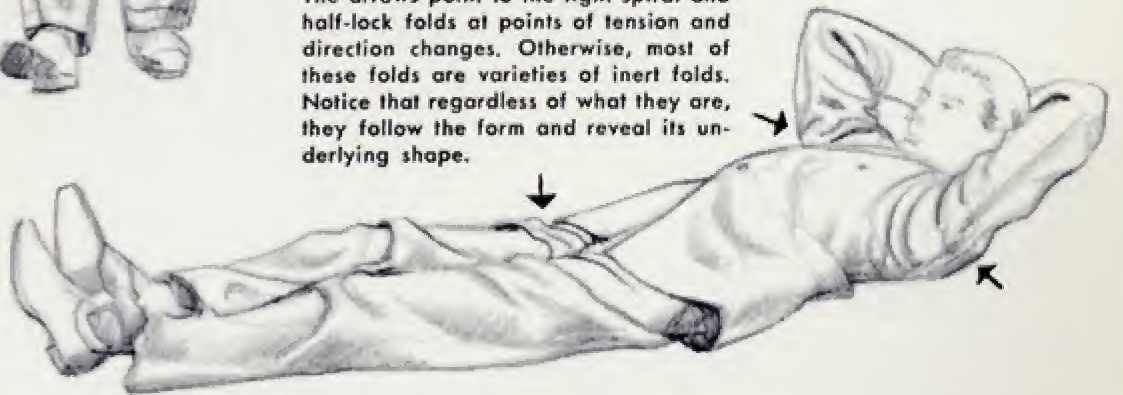
A kneeling, reaching figure, as shown, produces a strain that radiates spiral pipe folds from the forearm to the center of the back. The arm-shoulder connection is the key point. The arm folds radiate to it. The torso folds come from the shoulder, go under the arm, around the chest and down to the back.



The reaching arm and the torso bent at the waist do two things. First, the tension around the arm causes radiating spiral folds. Second, the large, half-lock folds occur where the slack of the coat meets the upper leg as the torso bends down. The back has small tight folds caused by the contrasting horizontal tension.



The arrows point to the tight spiral and half-lock folds at points of tension and direction changes. Otherwise, most of these folds are varieties of inert folds. Notice that regardless of what they are, they follow the form and reveal its underlying shape.

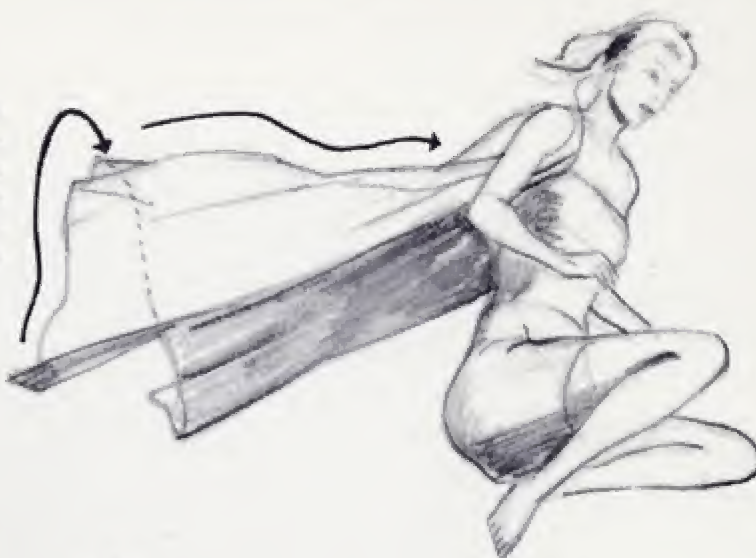


Drapery in motion

The most important thing to remember, and this is a *MUST*, is that the nude figure has to be drawn first and then draped, or you cannot draw convincing folds on a figure in motion. All of the drawings on this page started with a nude figure. *Careful study of the garment is also a must.* The shape and fullness of the jacket and the position and connection of the sleeve at the shoulder control most of the upper torso folds. The cut and fullness of the trousers, paying particular attention to the leg-torso connection, is the important controlling point for the trousers. The trousers behave differently in different actions. Sometimes the slack is thrust upward, caused by certain leg motion — at other times it is under tension. This requires observation, study and practice.

Women's clothes in motion are impossible to draw without the **most careful study of the garment**. The variety of styles and designs of the different units, such as the cut of the sleeve or the fullness of the jacket and skirt, makes this study absolutely necessary. The basic points of strain remain, but the particular garment will behave in its own particular manner. The rule to follow is to **establish the points of tension and support** on the nude figure. Then fit the garment to the figure and estimate the degree of motion so that the slack area falls away from the tension and support points, in keeping with the **estimated motion**. When you draw the folds radiating from these correct tension and support points, be sure to maintain the angle and direction of the folds in relation to the intensity of the motion.

This robe is cut narrower at the shoulders than at the hem. As it moves horizontally in the wind, it takes a wide sweeping curve at the hem. Its tension point at the arm-shoulder connection controls the entire shape of the garment as it recedes.



The short arrow shows the tension from the shoulder to the button, causing small diaper folds on the upper chest. The long arrow shows the two support points at the hips. As the skirt drops down at the back, caused by this bending figure, these two support points create large diaper folds to sweep from one to the other.



A loose cut coat, such as this, falls back and away from the direction of the action in several large pipe folds. The control of the folds is from the top of the shoulders, forward, then down and under the armpits, as shown by the arrow and dotted line.



The major folds in this dress are caused by the style of the garment, rather than by the action of the figure. Tight folds occur at the gathering of the cloth on one hip. Due to the influence of gravity, the long pipe folds descend from the other hip where there is a surplus of cloth that is not under tension.



A side view of the skirt shows how the skirt "works up" as the leg thrusts forward. A group of folds occur in the slack area. They are caused by the cloth moving up and descending diagonally back and away from the tension. They follow the contour of the leg. A group of zig-zag folds occur opposite the crooked arrow in the slack area near the leg-torso connection.



This illustrates how pipe folds follow the form of the figure. There is some slack cloth here and many folds, but the form of the figure predominates.

The inactive skirt is inert. Because of its fullness, part of the form of the legs is hidden. This fullness has caused a few diaper folds from the slight tension at the hips.



Use determines the character of the folds

Ranchers



Logger



Gentleman



Brand new!



Special work



Laborer

Things to remember

The final character of folds in garments depends upon the activity of the figure, plus the use and cut of the garment. A working overall is different from a new overall. The cowboy's levis develop folds determined by, and characteristic of, their use. The well-dressed executive has few "set" folds in a well-pressed suit that has little hard use or intense activity. *You must OBSERVE and STUDY the characteristics of the particular garment you are drawing.* The laws of folds are constant, but the final interpretation must be in character with the subject and the use of the garment. We cannot show them all to you. To make our point, we show here a few examples that illustrate and emphasize the idea.